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(71) Applicant *(for all designated States except US)*: AUSTRALIAN ARROW PTY LTD [AU/AU]; 65 Lathams Road, Carrum Downs, Victoria 3201 (AU).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: JANKOWSKI, David, Paul [AU/AU]; 5/4 Dennis Street, Clayton, Victoria 3168 (AU). KERRY, Leonard, John [AU/AU]; 3 Pulmar Street, Carrum Downs, Victoria 3201 (AU). JAMES, Campbell, Richard [AU/AU]; 11 Kunyung Road, Mt Eliza, Victoria 3930 (AU).

(74) Agent: FREEHILLS CARTER SMITH BEADLE; 101 Collins Street, Melbourne, Victoria 3000 (AU).

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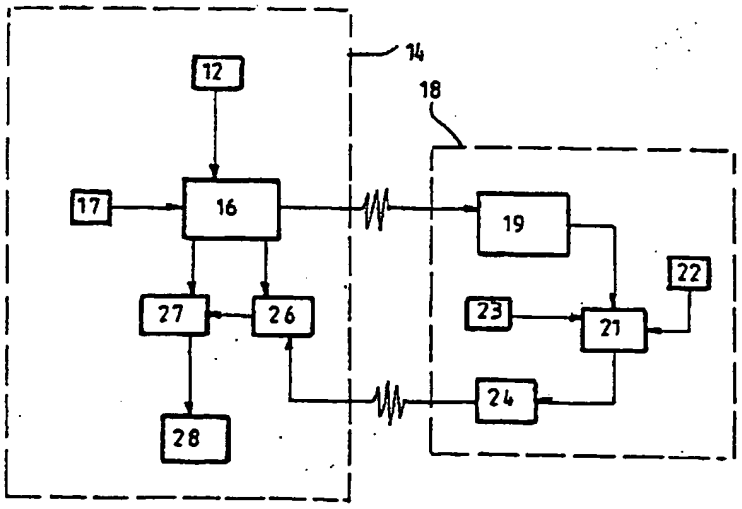
(54) Title: IMPROVED SECURITY SYSTEM




(57) Abstract: A security system suitable for a vehicle (14) has a transponder (16) and a remote, portable device (18). The transponder (16) is associated with a random number generator (17) and incorporates a signal receiver (26) and a comparator (27). On actuation, the transponder generates a trigger signal which includes vehicle identification information and a random number. The portable device (18) receives and decodes the trigger signal and responds with a response signal which comprises one or more RF signals of a frequency and duration calculated by the device using a stored algorithm and a unique number in conjunction with the transmitted random number in the trigger signal. The frequency of the response signal is therefore varied until each different random number, and the receiver in the transponder is tuned to the expected response signal frequency.

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